

FIG. 1

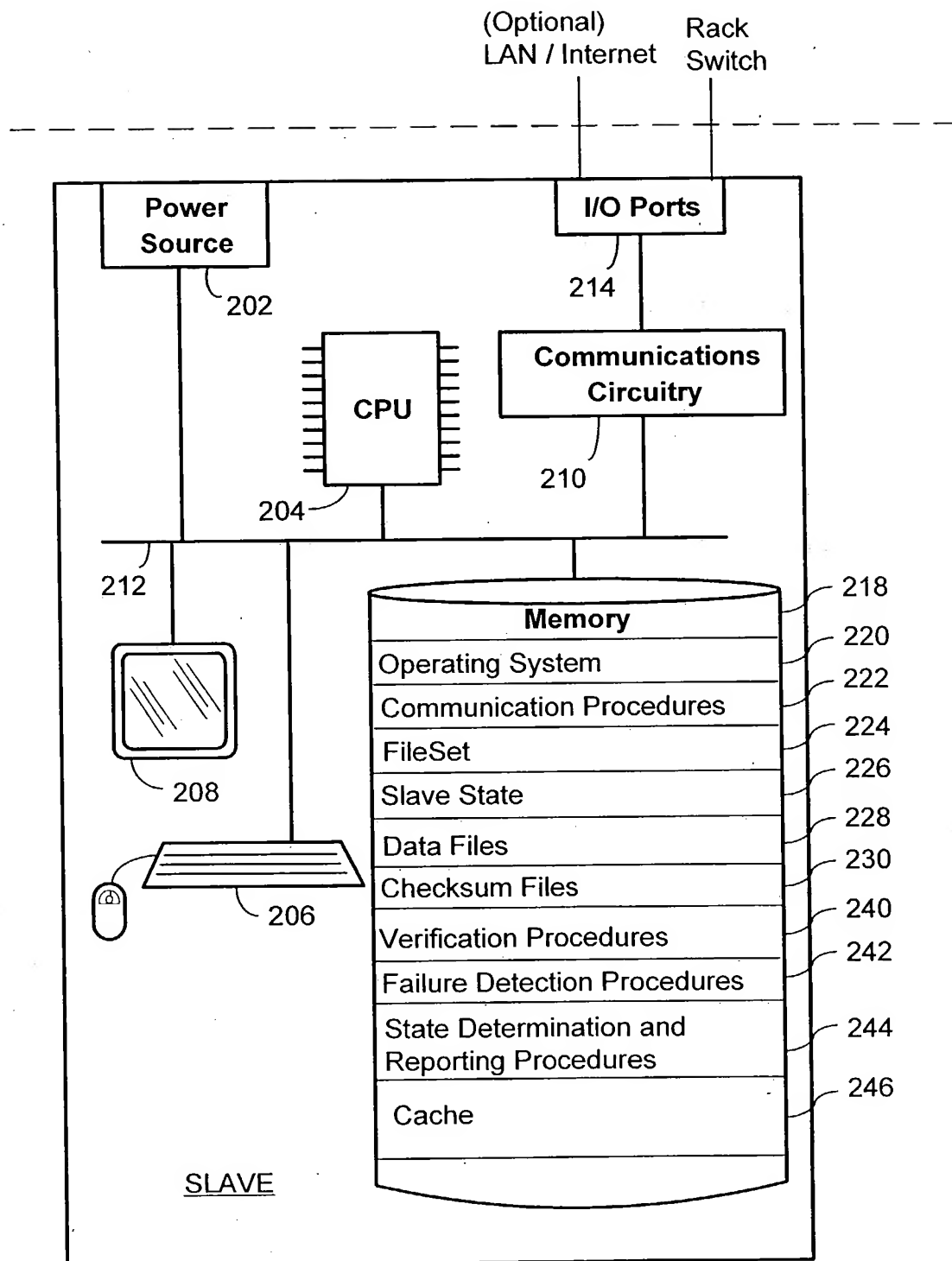


FIG. 2A

FileSet 224

FileID	Version
File001	022
File002	025
File002abc	002

⋮

⋮

FIG. 2B

Slave State 226

FileID	Version	File Size
FileSet07	096	10KB
File001	022	0
File002	025	16MB
File002abc	002	64MB
⋮	⋮	⋮

FIG. 2C

Data File 228

Block 1	Block 2	...
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Checksum File 230

CS1	CS2	...
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FIG. 2D

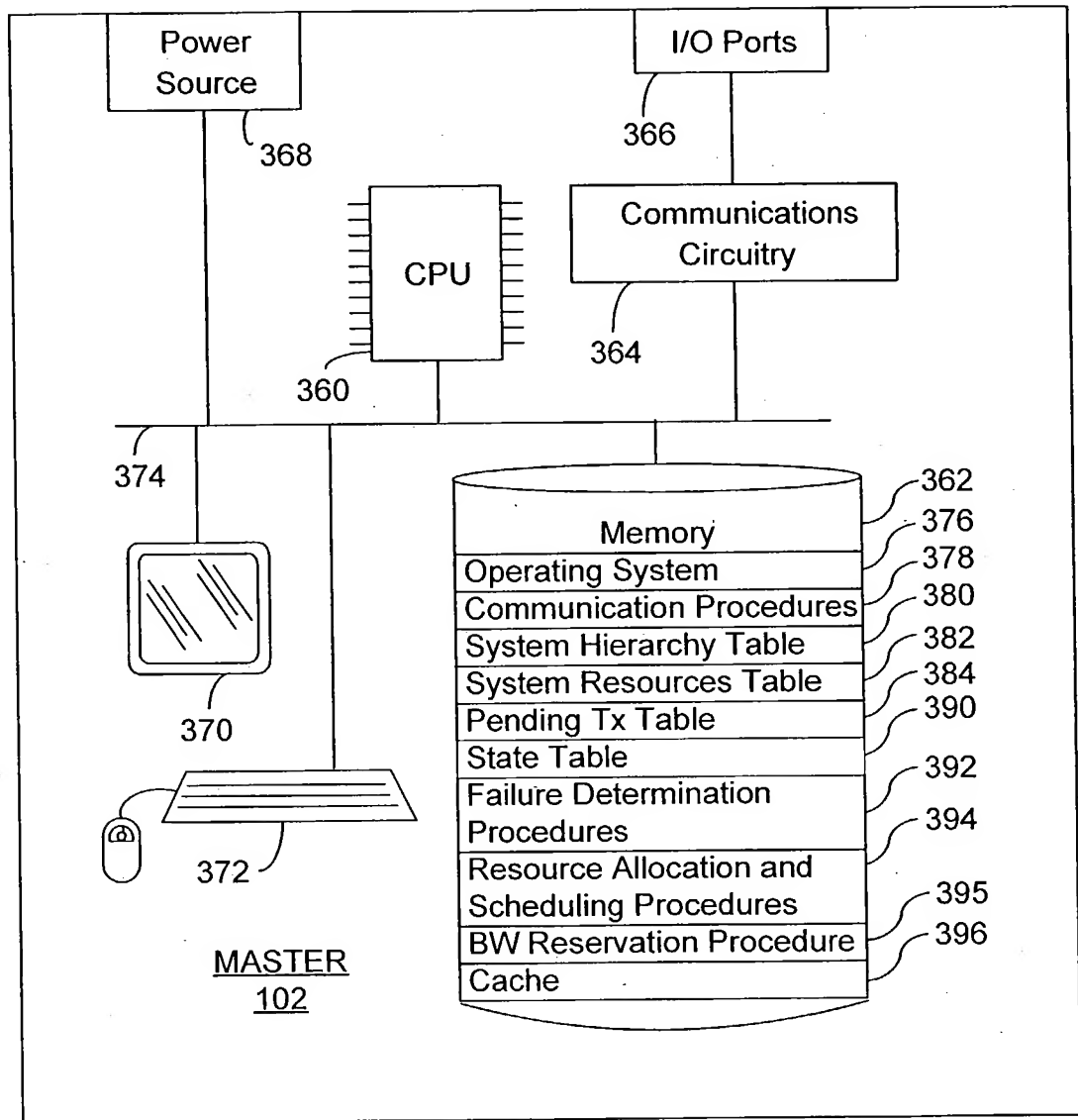


FIG. 3A

Slave Level Graph  
386

System Hierarchy Table 380

Slave ID	Slave Location
Slave 1	R1
Slave 2	R1
...	R1
Slave 17	R2
Slave 18	R2
...	R2
Slave 134	R35
Slave 135	R35
...	...
Slave 452	R139

Rack Level Graph  
388

Rack ID	Rack Location
Rack 1	DC1
Rack 2	DC1
...	DC1
Rack 35	DC2
...	...
Rack 120	DC4
...	...
Rack139	DC4

FIG. 3B

System Resources Table 382

Slave ID	Inbound BW	In BW in use	Outbound BW	Out BW in use
Slave 1	100	0	100	20
Slave 2	100	20	100	80
...	...	...	...	...
Slave 34	100	80	100	10
Slave 35	70	10	70	10
...	...	...	...	...
Slave 159	100	0	100	80
Slave 160	100	10	100	0
...	...	...	...	...
Salve 756	100	0	100	0

Slave Level Bandwidth Graph 321



Rack ID	Inbound BW	In BW in use	Outbound BW	Out BW in use
Rack 1	300	0	300	120
Rack 2	300	40	300	80
...	...	...	...	...
Rack 17	300	80	300	0
...	...	...	...	...
Rack 34	250	100	250	60
...	...	...	...	...
Rack 123	300	10	300	0

Rack Level Bandwidth Graph 325



Datacenter ID	Inbound BW	In BW in use	Outbound BW	Out BW in use
DC 1	500	0	500	120
DC 2	500	40	500	80
...	...	...	...	...
DC 4	400	80	400	0

Datacenter Level Bandwidth Graph 327



Trunk Level Bandwidth Graph 328



Trunk ID	BW	BW in use	Start	End	Latency
T1	25	0	DC1	DC2	100 ms
T2N	50	40	DC1	DC3	100 ms
T2S	100	100	DC3	DC1	50 ms
T3W	30	0	DC3	DC4	45 ms
T3E	30	20	DC2	DC4	15 ms
T4	30	20	DC2	DC3	35 ms

FIG. 3C

Pending Tx Table 384

Copy From	Copy To	BW used	End Time	Reserve Flag
Slave 1	Slave 23	10	8:25	0
Slave 2	Slave 134	20	8:21	0
...	...	...	...	...
Slave 34	Slave 35	10	8:22	0
Slave 35	Slave 87	10	10:36	1
...	...	...	...	...
Slave 89	Slave 191	10	9:25	1
...	...	...	...	...
Slave 189	Slave 199	100	8:23	0

FIG. 3D

State Table 392

Resource ID	State	Failure Count	Attempts		
T1	1	10	255		
...	...	...	...		
TJ	1	0	505		
DC1	1	1	543		
...	...	...	...		
DCK	1	0	123		
Rack 123	1	5	5678		
Rack 124	1	0	1003		
...	...	...	...		
Rack N	1	8	102		
				Last Contact	State Pointer
Slave 1	1	2	122	01:02:03	
Slave 2	0	50	98	00:01:00	
Slave 3	1	1	57	01:02:08	
...	...	...	...		
Slave M	1	1	89	01:02:01	

Slave3-R2-DC1 State:

FileID	Version	File Size	Failure Cnt	Attempts	State	Want Newest
FileSet07	096	10KB	0	7	1	1
File001	032	0	0	0	0	0
File002	035	16MB	1	4	1	0
File003abc	002	64MB	2	9	1	0
...	...	...	...	...	...	...

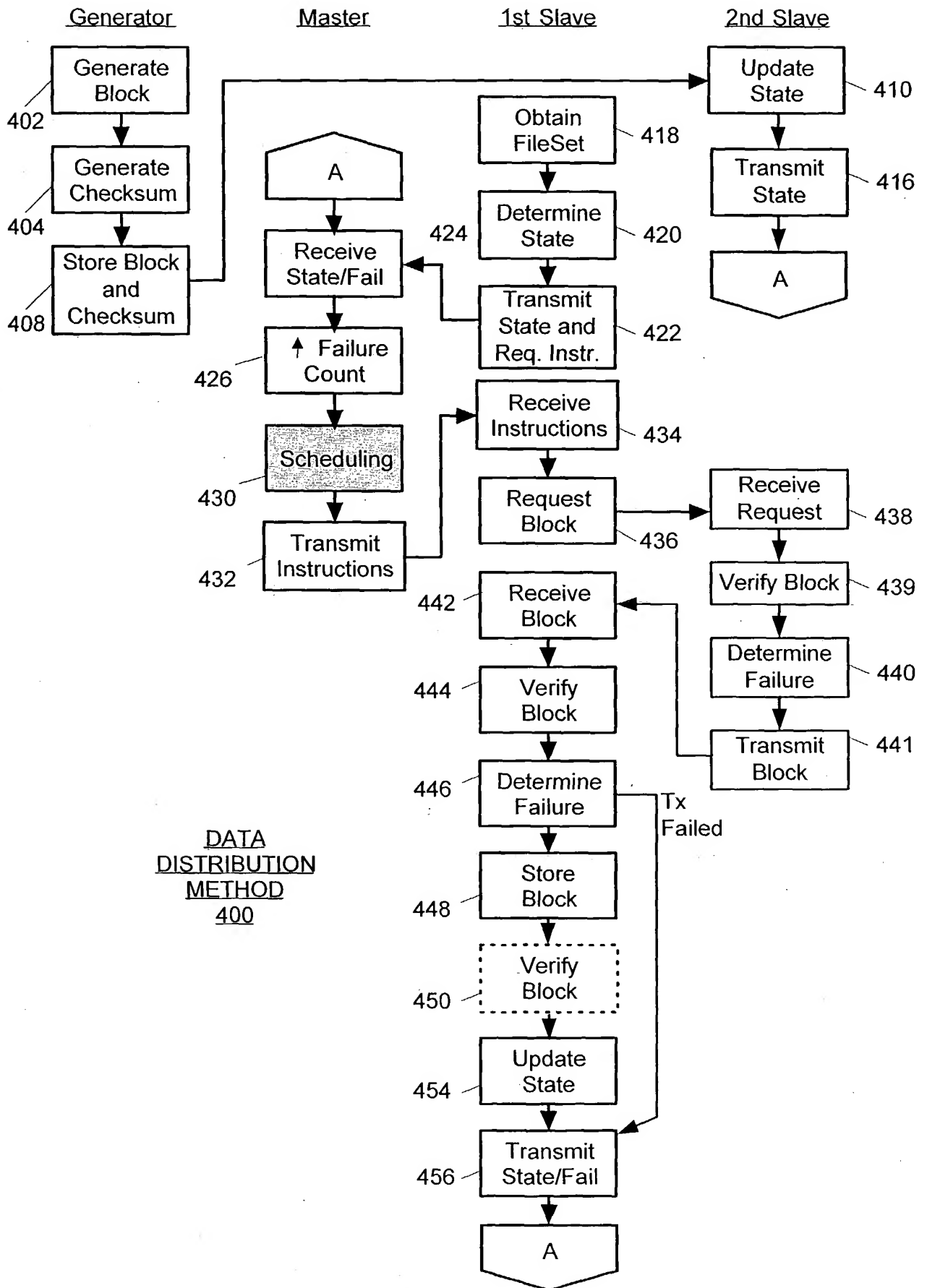
Pointer to list of  
slaves with same files

600

List of slaves having  
the files in FileSet07

602

FIG. 3E



LOCAL SCHEDULING 500

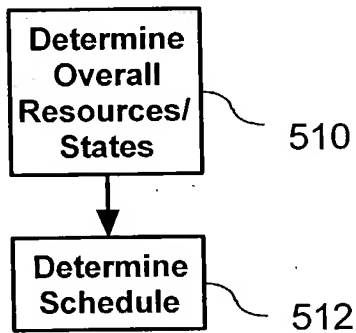


FIG. 5A

INCREMENTAL SCHEDULING 502

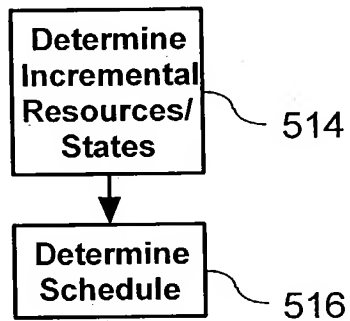


FIG. 5B

GLOBAL SCHEDULING 504

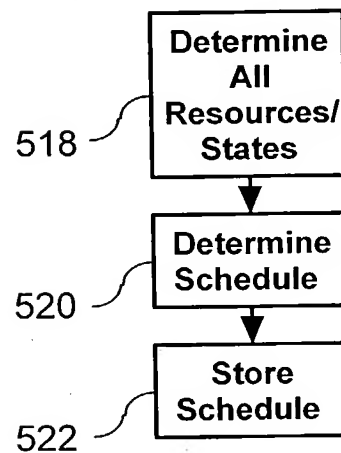


FIG. 5C

HIERARCHICAL PARTITIONED SCHEDULING 506

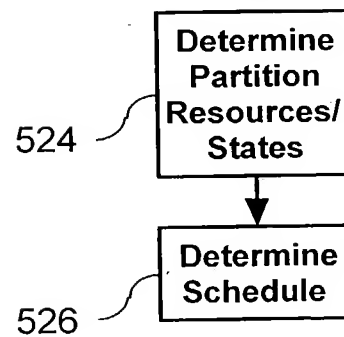


FIG. 5D